

**REMARKS**

Please reconsider the application in view of the above amendments and the following remarks. Applicant thanks the Examiner for carefully considering this application.

**Disposition of Claims**

Claims 1, 5, 10, and 12 were pending. Claims 10 and 12 have been canceled by this reply, without prejudice or disclaimer. Therefore, claims 1 and 5 are pending after the amendments. Claims 1 and 5 are independent claims.

**Claim Amendments**

Claims 1 and 5 have been amended to include limitations from claims 10 and 12 and to specify the fluorene units having the structure shown. Support for the particular fluorene unit can be found in Sample 19 (Chemical Formula 5), ¶ [0111] of the published application No. 2007/0208162. No new matter is introduced by these amendments.

**Objection to the Title**

The title has been amended to be more descriptive.

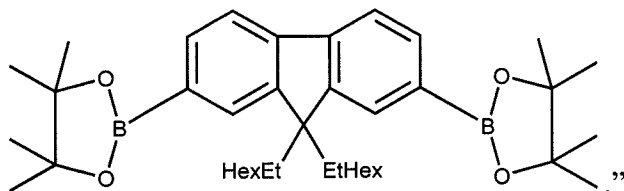
**Rejection(s) under 35 U.S.C. §103(a)**

- (A) Claims 1 and 5 were rejected under 35 U.S.C. §103(a) as being unpatentable over Aurelie et al. (WO 03/048225), where Treacher et al. (US 2004/0260090) (hereafter “Treacher”) is used as the English equivalent, in view of Son et al. (US 2003/0094595) (hereafter “Son”) and applicant’s admitted prior art (hereafter “AAPA”). Claims 1 and 5 have been

amended. To the extent that this rejection may still apply to the amended claims, this rejection is respectfully traversed.

The present invention relates to fluorene-containing light emitting polymers, that emit light when an electric field is applied thereto. In these polymers, the chlorine content (Cl) and the sum total ( $\Sigma M$ ) of metal elements (including at least one of sodium, nickel and palladium) satisfy a relation of:  $\Sigma M < Cl$  and the chlorine content is 50 ppm or less. The polymers comprise poly(9,9-diethylhexyl)fluorene that is end-capped with di(p-tolyl)-4-bromophenylamine. Such light emitting polymers are found to have maximum current efficiencies and the luminance damping time is long (i.e., the light emitting polymer deteriorates slowly).

Specifically, the amended independent claims 1 and 5 each require, *inter alia*, “wherein a chlorine content (Cl) and a sum total ( $\Sigma M$ ) of metal elements included in the polymer satisfy equation 1:  $\Sigma M < Cl$  ... , wherein the chlorine content is 50 ppm or less, wherein the polymer is a poly(9,9-diethylhexyl)fluorene that is end-capped with di(p-tolyl)-4-bromophenylamine, and wherein the polymer comprises one or more units of a fluorene copolymer having the following structure,



None of the cited prior art references teach or suggest the unique polymers and the relationship between the impurity metals and chloride, as disclosed in the amended claims 1

and 5. Therefore, the amended claims 1 and 5 are patentable over Treacher in view of Son and AAPA. Accordingly, withdrawal of this rejection is respectfully requested.

(B) Claims 1, 5, 10, and 12 are rejected under 35 U.S.C. §103(a) as being unpatentable over Miteva et al. (Adv. Mater. 2001, 13, 555-570) (hereafter “Miteva”) in view of Aurelie et al. (WO 03/048225), where Treacher et al. (US 2004/0260090) (hereafter “Treacher”) is used as the English equivalent, Son et al. (US 2003/0094595) (hereafter “Son”) and applicant’s admitted prior art (hereafter “AAPA”). Claims 10 and 12 have been canceled, rendering this rejection moot with respect to these claims. Claims 1 and 5 have been amended. To the extent that this rejection may still apply to the amended claims, this rejection is respectfully traversed.

Miteva teaches end caps of fluorene polymers. However, Miteva does not teach the unique relationship between the metal impurity and chlorine content, nor does Miteva teach the particular fluorene disclosed in the amended claims 1 and 5.

Thus, Miteva fails to teach or suggest that which is missing in Treacher, Son, and APAA. Therefore, the amended claims 1 and 5 are patentable over Miteva, in view of Treacher, Son, and APAA. Accordingly, withdrawal of this rejection is respectfully requested.

## **Conclusion**

Applicant believes this reply is fully responsive to all outstanding issues and places this application in condition for allowance. If this belief is incorrect, or other issues arise, the Examiner is encouraged to contact the undersigned or his associates at the telephone number

listed below. Please apply any charges not covered, or any credits, to Deposit Account 50-0591  
(Reference Number 17155/005001).

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Respectfully submitted,

By 

T. Chyau Liang, Ph.D.  
Registration No.: 48,885  
OSHA · LIANG LLP  
Two Houston Center  
909 Fannin Street, Suite 3500  
Houston, Texas 77010  
(713) 228-8600  
(713) 228-8778 (Fax)  
Attorney for Applicant